National Institute of Environmental Health Sciences

Scientific assessment of the effect of global change on the United States

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Abstract:

The climate is changing, and these changes are affecting the world around us. In order to deal with the changes that are taking place now and to prepare for those that are likely to happen in the future, decisionmakers need information about global change and its effects on the Nation and the world we live in. This national scientific assessment integrates, evaluates, and interprets the findings of the U.S. Climate Change Science Program (CCSP) and draws from and synthesizes findings from previous assessments of the science, including reports and products by the Intergovernmental Panel on Climate Change (IPCC). It analyzes current trends in global change, both natural and human-induced, and it projects major trends for the future. It analyzes the effects of these changes on the natural environment, agriculture, water resources, social systems, energy production and use, transportation, and human health. It is intended to help inform discussion of the relevant issues by decisionmakers, stakeholders, and the public. As such, this report addresses the requirements for assessment in the Global Change Research Act of 1990. This assessment addresses not only climate change, but also other change in the global environment -- including water resources, oceans, atmospheric chemistry, land productivity, and ecological systems -- that may alter the capacity of Earth to sustain life. This broader set of changes is referred to as 'global change,' as defined in the Global Change Research Act. Over the past several years, our understanding of climate variability and change and our ability to estimate their future effects has improved significantly. The conclusions in this assessment build on the vast body of observations, modeling, decision support, and other types of activities conducted under the auspices of CCSP and from previous assessments of the science, including reports and products by the IPCC, CCSP, and others. This assessment and the underlying assessments have been subjected to and improved through rigorous peer reviews.

Source:
http://www.globalchange.gov/browse/reports/scientific-assessment-effects-global-change-united-states

Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1, SRES A2, SRES B1, SRES B2

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Food/Water Security, Food/Water Security, Glacier/Snow Melt, Precipitation, Sea Level Rise, Solar Radiation, Temperature

Air Pollution: Allergens, Ozone, Particulate Matter

Extreme Weather Event: Drought, Flooding, Hurricanes/Cyclones, Landslides, Wildfires

Food/Water Quality: Biotoxin/Algal Bloom, Chemical, Pathogen, Other Water Quality Issue

Water Quality (other): Ocean acidification; Water temperature; Nutrients; Dissolved oxygen; Eutrophication

Food/Water Security: Agricultural Productivity, Fisheries, Livestock Productivity

Temperature: Extreme Cold, Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Arctic, Desert, Freshwater, Mountain, Ocean/Coastal, Urban, Other Geographical Feature

Other Geographical Feature : Forests; Grasslands

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Infectious Disease, Injury, Mental Health/Stress, Morbidity/Mortality, Respiratory Effect

Cardiovascular Effect: Heart Attack

Infectious Disease: Foodborne/Waterborne Disease, Vectorborne Disease, Zoonotic Disease

Foodborne/Waterborne Disease: Campylobacteriosis, Cryptosporidiosis, General Foodborne/Waterborne Disease, Giardiasis, Leptospirosis, Norovirus, Rotavirus, Salmonellosis, Vibrioses

Foodborne/Waterborne Disease (other): Naegleria fowleri

Vectorborne Disease: General Vectorborne, Mosquito-borne Disease, Tick-borne Disease

Mosquito-borne Disease: Viral Encephalitis, Viral Encephalitis, West Nile Virus

Tick-borne Disease: Lyme Disease

Zoonotic Disease: General Zoonotic Disease

Mental Health Effect/Stress: Mood Disorder, Stress Disorder

Respiratory Effect: Asthma, Upper Respiratory Allergy, Other Respiratory Effect

Respiratory Condition (other) : Chronic bronchitis

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children, Elderly, Low Socioeconomic Status, Workers

Other Vulnerable Population: Pre-existing medical conditions

Resource Type: ☑

format or standard characteristic of resource

Review

Socioeconomic Scenario: SES scenarios

Timescale: ☑

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content